

AMENDMENT UNDER 37 C.F.R. § 1.116  
Application No.: 10/694,174  
Atty Docket No.: Q78261

**REMARKS**

The Office Action of December 30, 2004 has been received and its contents carefully considered.

Claims 1 to 11 are all the claims pending in the application.

Claim 10 has been rejected under the second paragraph of 35 U.S.C. § 112 as indefinite.

The Examiner states that it is unclear from the specification how the non-magnetic layer is separate from the cleaning layer. The Examiner states that in the specification, the cleaning layer is said to have a non-magnetic layer therein, but the non-magnetic layer is not recited as a separate layer from the cleaning layer, contrary to the claim recitations.

The Examiner further states that the phrase “in this order” is also unclear.

In response, applicants point out that the specification indicates at page 5 that the cleaning layer can be comprised of a lower layer and an upper layer, with the lower layer being a non-magnetic layer containing inorganic powder and a binder. Thus, as defined in the specification, the non-magnetic lower layer is one layer of the cleaning layer. In order to more clearly indicate that the non-magnetic lower layer is one layer of the cleaning layer, applicants have amended claim 10 as set forth above to state that the cleaning layer comprises an upper layer and a non-magnetic lower layer between the upper layer and the substrate, with the lower layer containing inorganic powder and a binder, and have deleted the phrase “in this order”.

In view of the above, applicants request withdrawal of this rejection.

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Claims 1 to 11 have been rejected under 35 U.S.C. § 102(b) as anticipated by the previously cited U.S. Patent 4,701,364 to Miyoshi et al.

Applicants submit that Miyoshi et al do not disclose or suggest the subject matter of claims 1 to 11 and, accordingly, request withdrawal of this rejection.

The Examiner repeats her previous statement that Miyoshi et al disclose a method of cleaning a magnetic head with a tape having a stiffness of 2 or less, a cleaning portion having carbon black and ferromagnetic powder thereon, and a thickness of 2-7  $\mu\text{m}$  and a roughness within the claimed range.

In addition, the Examiner states her understanding that Miyoshi et al disclose a tape having the same elements as set forth in the present claims, such as a non-magnetic layer within the cleaning layer, as disclosed at column 3, lines 45 to 50 of Miyoshi et al. In addition, the Examiner states that Miyoshi et al disclose, at column 4, lines 19 to 21, that other layers can be provided between the support and cleaning layer.

The Examiner further states that she has considered the arguments filed in the Amendment Under 37 C.F.R. § 1.111 on October 4, 2004, but considers them to not be persuasive.

As stated in the Amendment under 37 C.F.R. § 1.111 filed on October 4, 2004, the present invention as set forth in claim 1 is directed to a method for cleaning a magnetic head using a cleaning tape comprising a substrate and a cleaning layer, wherein the cleaning tape has a

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stiffness of 2 or less in a width direction, and the magnetic head has trenches substantially parallel to a sliding direction of the cleaning tape.

The Miyoshi et al patent discloses a tape for cleaning a magnetic head, where the tape comprises a substrate and a cleaning layer.

Miyoshi et al, however, do not disclose that the magnetic head has trenches substantially parallel to a sliding direction of the cleaning tape.

Accordingly, applicants submit that Miyoshi et al do not anticipate claim 1.

Further, applicants submit that the present invention is not obvious from the teachings of Miyoshi et al.

In a case where a trenched head is in use, the spacing between the tape and the head is reduced, since the air accompanied by the running cleaning tape is eliminated. The trenches act to suck the air. See the previously submitted Digital Instrumentation Recorder information sheet.

The present invention has the technical task of finding a method of head cleaning capable of compensating for the change in the radius of curvature due to head abrasion in a system in which the spacing is very small, thus achieving an intimate head contact, and has found, as a solution for the task, to regulate the stiffness of the cleaning tape in the width direction so as not to exceed 2.

Miyoshi et al have the technical task of obtaining a cleaning tape capable of removing head clogging in a short period of time without damaging the magnetic head, as disclosed at

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column 2, lines 6 to 9, but do not have the task of finding a cleaning method capable of compensating for the change in the radius of curvature due to the abrasion of a head with trenches as in the present invention. Miyoshi et al, which do not have the technical task of the present invention, have no motivation of devising the present invention.

Moreover, Miyoshi et al disclose a cleaning tape having a stiffness of 2 or less, but contain no description at all on a magnetic head with trenches according to the present invention. The heads used in the examples of Miyoshi et al are not of the type with trenches, either.

Also, Miyoshi et al do not contain any suggestion or description on regulating the stiffness of the cleaning tape in the width direction so as not to exceed 2 in order to achieve a cleaning method capable of compensating for the change in the radius of curvature due to the abrasion of a head with trenches. Therefore, applicants submit that one of ordinary skill in the art would not have been led to devise the present invention from the teachings of Miyoshi et al, which include no suggestion or description on the specific constitution of the present invention.

Still further, the present invention exhibits a remarkable effect on achieving a cleaning method capable of compensating for the change in the radius of curvature due to the abrasion of a head with trenches by regulating the stiffness of a cleaning tape to be 2 or less in the width direction. Such an effect is too remarkable to be predicted from the cleaning effect as well as the head damage-preventing effect of a head without trenches set forth in Miyoshi et al.

As has been discussed above, the present invention is not identical to or suggested by the teachings of Miyoshi et al.

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The Examiner acknowledges that applicants have argued that the workpiece of Miyoshi et al does not have trenches parallel to a sliding direction of the tape. The Examiner asserts that the structure of the workpiece does not further limit the method of using the cleaning tape. The Examiner states that any known workpiece, such as a magnetic head with trenches parallel to the sliding direction could be used in the claimed method, and that Miyoshi et al disclose using this tape with the particular claimed structure for cleaning a magnetic head.

Applicants disagree with the Examiner's analysis.

In particular, the Examiner has characterized the present claims as being directed to a method of using a cleaning tape, and has stated that the present claims are not combination claims where the details of the workpiece are claimed in combination with the method of using the cleaning tape. This characterization of the claims by the Examiner is not correct.

Specifically, the present claim are directed to a "method for cleaning a magnetic head", and are not merely directed to a method of using a cleaning tape.

Further, the present claims clearly require the combination of cleaning a particular magnetic head. Thus, claim 1 specifically states that the magnetic head that is cleaned is a magnetic head which has trenches substantially parallel to a sliding direction of the cleaning tape. Accordingly, claim 1 requires that the magnetic head be a magnetic head that has trenches substantially parallel to a sliding direction of the cleaning tape.

Further, the Examiner states that Miyoshi et al disclose a magnetic head with trenches parallel to the sliding direction. However, Miyoshi et al do not disclose that the magnetic head

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has trenches substantially parallel to its sliding direction of the cleaning tape. Applicants do not understand why the Examiner states that Miyoshi et al disclose a magnetic head with a trenches parallel to a sliding direction. Miyoshi et al simply do not contain such a disclosure. If the Examiner insists that Miyoshi et al contain such a disclosure, then applicants request the Examiner to identify the specific portion of Miyoshi et al that she is relying on for such a disclosure.

In addition, with respect to claim 10, applicants disagree with the Examiner statement that Miyoshi et al disclose a tape having a non-magnetic layer within the cleaning layer. The Examiner cites column 3, lines 45 to 54 in support of this statement. Column 3, lines 45 to 50 of Miyoshi et al, however, merely disclose that the cleaning layer, in addition to having ferromagnetic metal powder as an abrasive, can also contain other conventional abrasives. This portion of Miyoshi et al does not disclose that a separate non-magnetic layer can be employed within the cleaning layer.

The Examiner is correct that Miyoshi et al disclose, at column 4, that an adhesive layer or a subbing layer can be provided between the cleaning layer and the support. Claim 10, however, recites that the non-magnetic layer contains inorganic powder and a binder. There is no disclosure in Miyoshi et al that the adhesive layer, or subbing layer, should contain inorganic powder in combination with a binder.

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In view of the above, applicants submit that Miyoshi et al do not defeat the patentability of the present claims and, accordingly, request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

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